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WO 97/27534 A2 WO 96/23265 A2
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(58) Field of Search

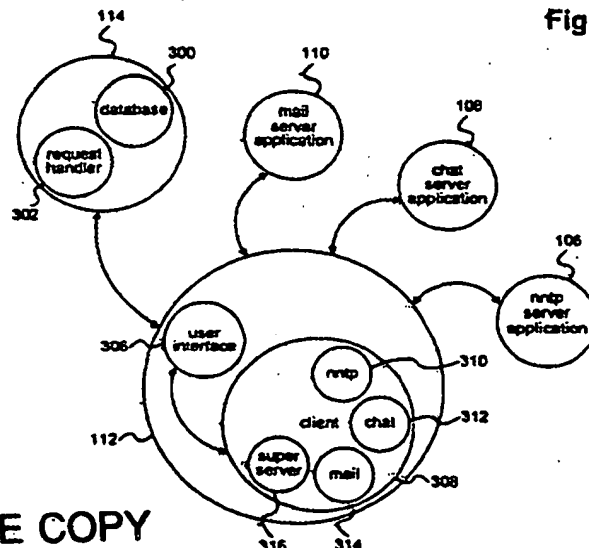
UK CL (Edition P) G4A AFGDX
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COMPUTER, INSPEC, WPI.

(54) Abstract Title

Interface for computer discussion technologies

(57) The system provides an enhanced interface to news and chat forums. Structurally, it includes a super-server application 114, a database 300, and a client applet 112. The super-server application is implemented on a server (104d, Figure 1) to maintain and update information representative of the user's environment and interface, and to handle and reply to requests sent by a user of the client system. The client applet accesses information included in the super-server application and database to augment the information included in standardized protocols such as NNTP and Internet Relay Chat. Using the augmented information, the client applet is adapted, at the user's request; to configure the user's interface and to organize data and information received from a wide area network (WAN), such as the Internet, through the super-server application; to create the user's personal profile and incorporate it into the the data and information received from the WAN; and to select data for storage in a device. An enhanced interface is provided which presents network news and chat forums in an easily understandable fashion.

Fig. 3

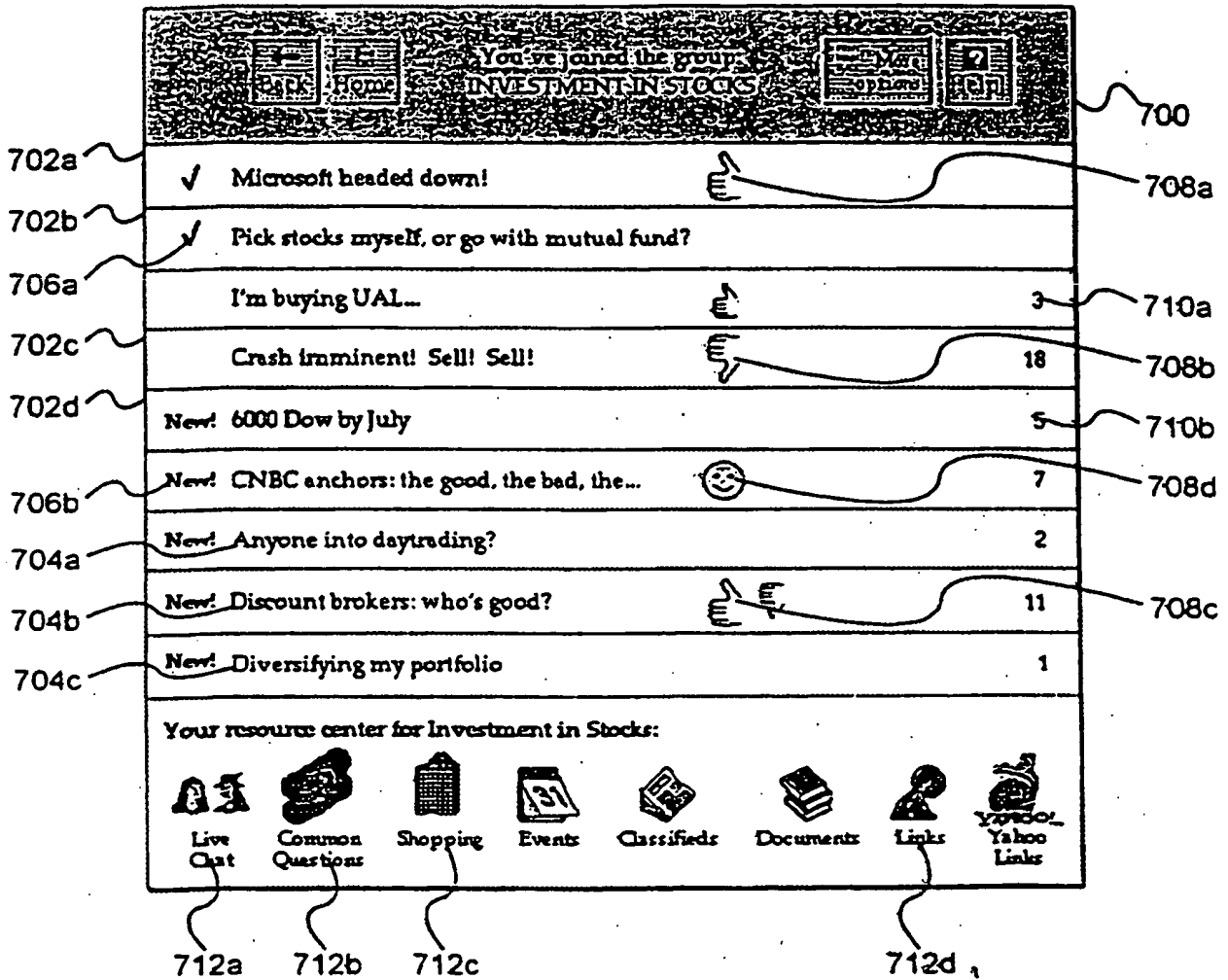


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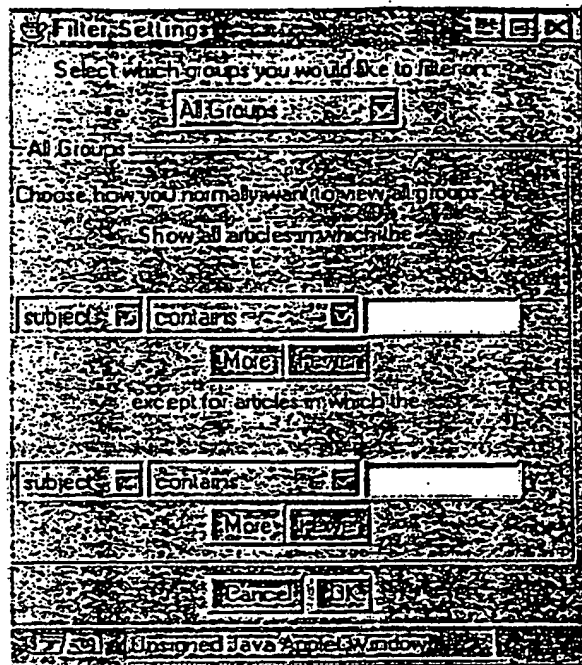
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Fig. 7



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Filter Screen

Fig. 13

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System for Enhanced Discussion Technologies

The following application claims ^{Priority from} ~~the benefit of~~ US Provisional Application
Serial No. 60/040,028 entitled "Usenet News Reader" by Richard Simoni and
5 Douglas Pan, filed 3/4/97, the disclosure of which is incorporated in this
document by reference.

The present invention relates generally to computer discussion
technologies. More specifically, the present invention is a method and apparatus
10 for providing enhanced interfaces to computer discussion technologies such as
electronic news, electronic mail, voice mail, Internet Chat, voice
conference, video conference, fax by email, etc.

Electronic news is a discussion technology that has become familiar to
computer users worldwide. In a typical electronic news system, users post
15 articles to newsgroups. Users also read and respond to articles posted by other
users. Each article and response is archived for a period of time, allowing users
to participate in discussions in a non-real time fashion.

Within the Internet, the most widely used form of electronic news is
USENET news. USENET news began with a simple process whereby users
20 exchanged articles via electronic mail. Starting from this simple beginning,
USENET news has evolved into a complex system where news articles are
archived on news server systems. The archived news articles are transferred, on
demand, to client systems using the network news transfer protocol (NNTP)

described in Internet RFC 977. Users of the client systems view the news articles utilizing the user interfaces provided by programs known as news readers.

USENET news has proven to be an effective and popular form of electronic news. In fact, thousands of different USENET newsgroups are now available within the Internet, and millions of articles are posted each week. The basic USENET technology is also widely deployed within the internal networks, or intranets, of many companies and organizations. These companies and organizations use USENET-style news server systems and NNTP to distribute articles within their internal computer systems.

In spite of the overall effectiveness of USENET news, practice has shown that there is still a need for improvement within this technology. In particular, practice has shown that a great many users find the user interfaces provided by many news readers to be somewhat arcane and difficult to use. Even interfaces that do not appear to be arcane still lack many of the features that users have come to expect when using other programs, such as browsers for the World Wide Web. Thus, there is a need for improved user interfaces that simplify the use of USENET news.

Unfortunately, production of improved user interfaces has proven to be a difficult task. This difficulty is compounded because of the widespread use of the USENET technology. Simply put, there is a large installed base of news readers and a large installed base of news server systems. Any changes made to provide an enhanced news reader program must be compatible with a large amount of preexisting software. In particular, this means that it is impractical to

objects representing the voting results for each of the articles specified in the request.

In order to record a user's votes, client applet 112 sends those votes to super-server application 114. To send the votes, client applet 112 sends a VOTE
5 request to super-server application 114. The request includes, in order, the value eight followed by a list of strings representing the message-ids of the articles for which votes are being sent, followed by a list of objects representing, for each article, the candidates for which the user voted. In response, super-server application 114 records and tabulates the vote internally for inclusion in
10 responses to future GET_VOTING_RESULTS that super-server application 114 will receive.

SUPER-SERVER APPLICATION

Super-server application 114 is preferably implemented as a Java® program. As shown in Figure 3, super-server application 114 includes a
15 database 300 and a request handler 302. Database 300 is used to store information for the users of client applet 112. This information includes the ranges of articles that users have read in particular newsgroups. User preferences may also be maintained as part of database 300. Database 300 is also used by super-server application 114 to maintain the user interface
20 information that is used by client applet 112.

Request handler 302 is called by super-server application 114 to process requests received from client application 112. In response to a request, request handler 302 first determines the super-server protocol operation code of the

request. Based on the operation code, request handler 302 performs or calls the functions required to implement the server side of the super-server protocol.

Figure 1 shows a single super-server application 114 within network 100. It may be preferable to include multiple super-server applications 114 in network 100. This is especially true in cases where load-balancing or automatic failover functions are required.

CLIENT APPLET

Client applet 112 is preferably implemented as a Java® applet. Client applet 112 is also preferably downloaded on demand from a server system 104 included in network 100. Once downloaded, client applet 112 is executed under control of a Java®-compatible web browser, such as Microsoft Internet Explorer, or Netscape Navigator®. Alternately, client applet 112 may be implemented using ActiveX or other programming languages. Client applet 112 may also be implemented as a standalone application that functions without the aid of a web browser.

As shown in Figure 3, client applet 112 includes a user interface package 306 and a client package 308. Client package 308 includes, in turn, an NNTP package 310, a chat class 312, a mail class 314 and a super-server class 316. User interface package 306 provides the user interface for client applet 112. NNTP package 310, chat class 312, mail class 314 and super-server class 316 provide client applet 112 with the ability to communicate with NNTP server application 106, chat server application 108, mail server application 110 and super-server application 114, respectively.

Client applet 112 may be extended to provide custom newsgroups created by applying filtering criteria across several newsgroups. This allows a user or the administrator of super-server application 114 to create a custom "newsgroup," which though it appears as a newsgroup to the user, isn't really a distinct newsgroup carried by NNTP servers. Instead, the custom newsgroup is an aggregation of messages that meet a set of criteria specified by the user or the administrator of super-server application 114. He or she can specify the newsgroups or part of the improved newsgroup hierarchy across which the specified filtering criteria is applied. Using this mechanism, a user or administrator can create what appears to be a custom newsgroup that consists, for instance, of all articles in all newsgroups related to stock investing that include the word "penny." As another example, a moderator may review all of the articles posted to one or more newsgroups. Articles deemed to be appropriate for children, or some other audience, would be included in a custom group.

15 ~~When custom newsgroups are used, topics 702, included in screen 700,~~
may be culled from multiple newsgroups. For example, topic 702a might be associated with a thread found in a newsgroup related to stocks that are traded on domestic stock exchanges. In the same example, topic 702b might be associated with a thread found in a newsgroup related to stocks that are traded
20 on foreign stock exchanges.

~~Like other filtering tasks, the custom newsgroup feature is best~~
implemented within super-server application 114. This keeps client applet 112

from having to download many articles from different newsgroups in order to apply the selection criteria.

Custom newsgroups can optionally be "moderated," in which all messages posted to the custom newsgroup are first sent to a human moderator for approval. Only messages approved by the moderator are then made available to the users reading the custom newsgroup. This feature may be used, among other purposes, to create custom newsgroups intended for children so that a human can filter out any objectionable postings before they reach the custom newsgroup readership comprised of minors.

10 Client applet 112 may be extended to provide newsgroup creation by users. This allows a user to start a newsgroup on the topic of his or her choice. Though it appears as a real newsgroup to the users, a newsgroup is not created within the USENET hierarchy stored on NNTP servers. Instead, the newsgroup is completely hosted on super-server application 114 and all articles posted to the newsgroup are stored within super-server application 114.

15 Client applet 112 may be extended to provide for the migration of mailing lists to newsgroups. This allows the maintainer of an email list to set up a newsgroup (as discussed previously) and create a gateway between his or her mailing list and the newsgroup. This gateway operates as follows: every message posted to the newsgroup is mailed to the members of the mailing list, and every message posted to the mailing list is also posted to the newsgroup. In this way, the mailing list maintainer can migrate his or her users to a newsgroup, where a large volume of posted messages will not clutter users' mailboxes.

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